

## METHODS AND APPARATUS FOR NETWORK SIGNAL AGGREGATION AND BANDWIDTH REDUCTION

### ABSTRACT OF THE DISCLOSURE

5

Wireless network demands continually increase as wireless service providers pursue additional service capabilities. In a cellular communication system, leased lines between remote cell sites and the corresponding Mobile Switching Offices (MSOs) remain a major operating cost. Bandwidth reduction by identification and elimination of  
10 payload data and control information which need not be fully replicated because it can be deduced from information accessible or previously transmitted allows fewer lines to support the same bandwidth. A wireless access gateway is operable to aggregate such redundant and regenerable data on a backhaul link between a wireless cell site and the corresponding mobile switching office (MSO) to provide low-latency, type specific  
15 lossless bandwidth reduction. The wireless access gateway identifies regenerable information and eliminates portions of the data which the device need not transmit because the data is redundant, or accessible or recreatable, at the receiving side. In this manner, the access device allows fewer lines to carry the reduced message traffic by transmitting only the non-recreatable data and eliminating message traffic for regenerable  
20 information.